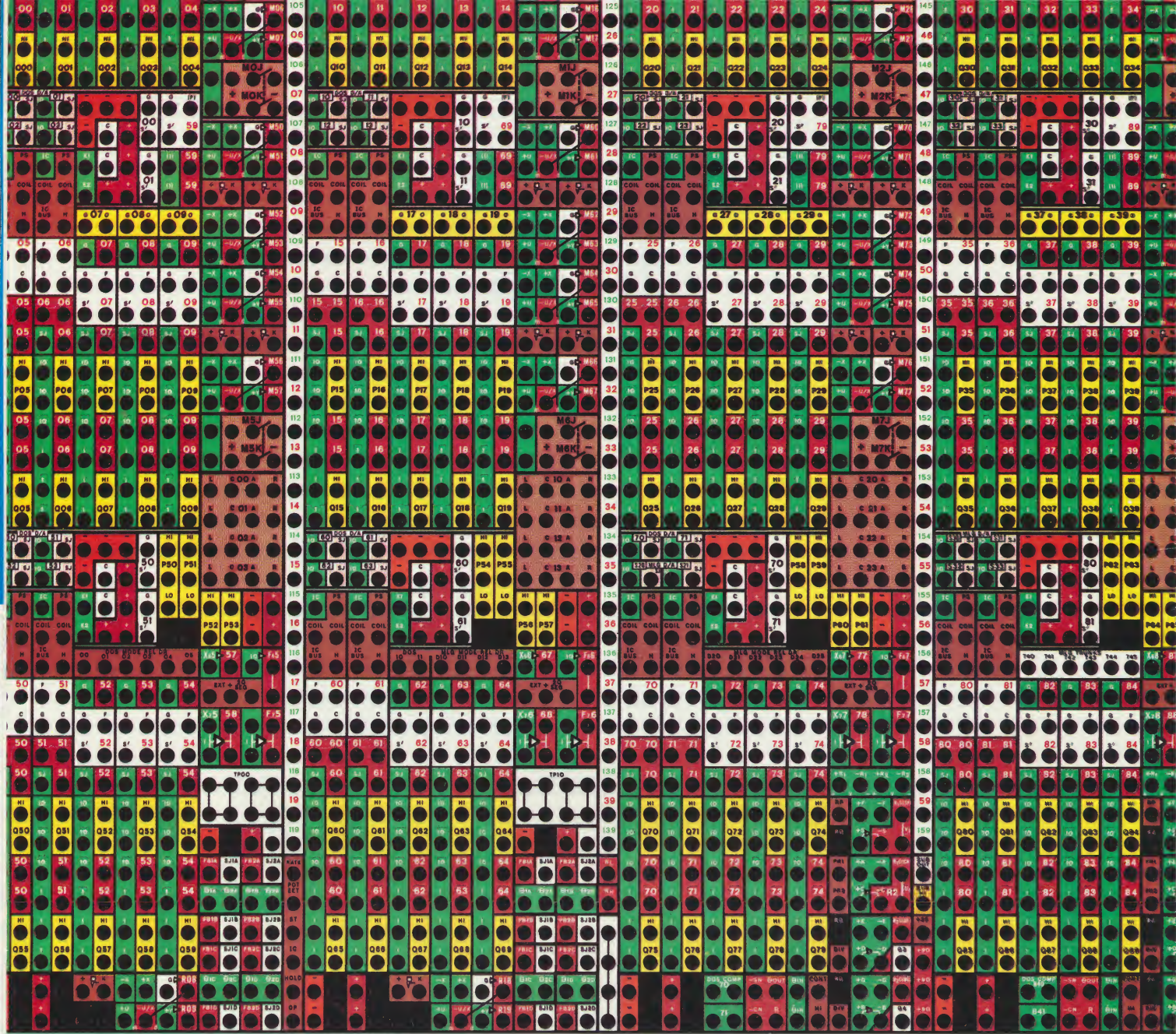




231R-IV

analog computing system

PROGRAM
PATCHING
SYSTEM

UNITED STATES and CANADIAN OPERATIONS

Marketing Division SALES OFFICES

EASTERN UNITED STATES

Eastern Regional Office: West Long Branch, N.J., Tel: 201-229-1100, TWX 201-222-2795, Cable: PACE Long Branch, New Jersey
R & D and Special Product Sales: West Long Branch, N. J. Tel: 201-229-1100, TWX 201-222-2795, Cable: PACE Long Branch, N. J.
Parts Sales: West Long Branch, New Jersey, Telephone: 201-229-1100, TWX 201-222-2795, Cable: PACE Long Branch, N. J.
Northeastern District Office: 875 Providence Highway, Dedham, Massachusetts, Telephone: 617-326-6756
Southeastern District Office: 7902 Old Georgetown Road, Bethesda 14, Maryland, Telephone: 301-652-3625-3626
Cape Kennedy: 412 North Waterway Drive, Satellite Beach, Florida, Telephone: 305-262-1905

CENTRAL UNITED STATES

Central Regional Office: 325 West Prospect Avenue, Mount Prospect, Illinois, Telephone: 312-255-6070, TWX 312-392-1695

SOUTHWESTERN UNITED STATES

Southwestern United States: 3514 Cedar Springs Road, Room 211, Dallas, Texas, Telephone: 214-528-4920
Houston District Office: 7135 Office City Drive, Room 200, Houston, Texas, Telephone: 713-645-0544
Huntsville District Office: 215 Clinton Avenue W., Huntsville, Alabama, Telephone: 205-534-2429

WESTERN UNITED STATES

Western Regional Office: 1500 East Imperial Highway, El Segundo, California, Telephone: 213-322-3124, TWX 213-322-2144
San Francisco District Office: 4151 Middlefield Road, Palo Alto, California, Telephone: 415-321-0363

SERVICE ENGINEERING OFFICES

EASTERN UNITED STATES

Eastern U. S. Headquarters: West Long Branch, N. J., Tel: 201-229-1100, TWX 201-222-2795, Cable: PACE Long Branch, N. J.
Boston Area: 875 Providence Highway, Dedham, Massachusetts, Telephone: 617-326-6756
Washington D. C. Area: 7902 Old Georgetown Road, Bethesda 14, Maryland, Telephone: 301-652-3625-3626
Princeton, New Jersey: U. S. Route No. 1, Princeton, New Jersey, P. O. Box 582, Telephone: 609-924-2900
Resident Field Engineers: Bedford, Mass. / Florham Park, N.J. / Baltimore, Maryland / Kings Point, Long Island, New York
Washington, D. C.

SOUTHEASTERN UNITED STATES

Huntsville, Alabama Area: 2113 Gladstone Drive, N. E., Huntsville, Alabama, Telephone: 205-536-7271

CENTRAL UNITED STATES

Central Regional Office: 325 West Prospect Avenue, Mount Prospect, Illinois, Telephone 312-255-6070, TWX 312-392-1695
Pittsburgh Area: 1749 McNary Boulevard, Pittsburgh 21, Pennsylvania, Telephone: 412-244-1661
Resident Field Engineers: Detroit, Michigan / Pittsburgh, Pennsylvania

SOUTHWESTERN UNITED STATES

Southwestern United States: 3514 Cedar Springs Road, Dallas, Texas, Telephone: 214-528-4920
Houston Area: 7135 Office City Drive, Houston, Texas, Telephone: 713-645-0544
Resident Field Engineers: San Antonio, Texas / Alamogordo, New Mexico

WESTERN UNITED STATES

Western U. S. Headquarters: CUSTOMER REPAIR FACILITY 310 East Imperial Highway, El Segundo, California, Telephone: 213-322-4166

Western U. S. Headquarters: SERVICE ENGINEERING FACILITY, 1500 East Imperial Highway, El Segundo, California, Telephone: 213-322-3124, Telex: 213-322-2144

Denver Area: 70 South Benton Drive, Denver, Colorado, Telephone: 303-233-0818
San Francisco Area: 4151 Middlefield Road, Palo Alto, California, Telephone: 415-321-0363
Resident Field Engineers: Edwards, California / Pasadena, California / Moffett Field, California

CANADA

Toronto Office: Mr. Allen Crawford Associates, Ltd., 4 Finch Avenue, West, Willowdale, Ontario, Canada, Tel: 416-225-7771

Research and Computation Division

Princeton Computation Center: U. S. Route No. 1, Princeton, New Jersey, P. O. Box 582, Telephone: 609-452-2900
EAI Computation Center at Los Angeles, Inc.: 1500 East Imperial Highway, El Segundo California, Telephone: 213-322-3220
Integrated Controls Department: 4151 Middlefield Road, Palo Alto, California, Telephone: 415-321-7801
Washington, D. C. Computation Center: Telephone: 301-652-3625-3626

Engineering and Manufacturing Division

Engineering Department: West Long Branch, New Jersey, Tel: 201-229-1100, TWX 201-222-2795, Cable: PACE Long Branch, N. J.
Manufacturing Department: West Long Branch, N.J., Tel: 201-229-1100, TWX 201-222-2795, Cable: PACE Long Branch, N. J.

INTERNATIONAL OPERATIONS

SALES OFFICES

ENGLAND

Electronic Associates, Ltd.: Burgess Hill, Sussex, England, Tel: Burgess Hill (Sussex) 5101-5, Telex: 87183, Cable: LONPACE

BELGIUM

EAI-European Continental Regional Office: Centre International, 22nd Floor, Place Rogier, Brussels 1, Belgium
Telephone: Brussels 18-40-04, Telex: 2.21-106, Cable: PACEBELG Brussels

FRANCE

EAI-Electronic Associates SARL: 11 rue du Faubourg Poissonniere, Paris 9, France, Telephone: PRO 93-69

GERMANY

EAI-Electronic Associates GMBH: Martinstrasse, 14, Aachen, West Germany, Telephone: 26041

AUSTRALIA

EAI-Electronic Associates, Pty., Ltd.: 87 Alexander St., Crows Nest, N.S.W. Australia, Tel: 43-1557, Cable: PACEAUS, Sydney
34 Queens Road, Melbourne S.C. 2, Australia

SERVICE ENGINEERING OFFICES

EUROPEAN CONTINENT

EAI-European Continental Reg. Office: Centre International, 22nd Floor, Place Rogier, Brussels 1, Belgium,
Telephone: Brussels 18-40-04, Telex: 2.21-106, Cable: PACEBELG Brussels

UNITED KINGDOM AND SCANDINAVIA

UK & Scandinavia: Electronic Associates, Ltd., Burgess Hill, Sussex, England, Tel: Burgess Hill (Sussex) 5101-5 Telex: 87183
Cable: LONPACE

ENGINEERING AND MANUFACTURING

Electronic Associates, Ltd.: Burgess Hill, Sussex, England, Tel: Burgess Hill (Sussex) 5101-5, Telex: 87183, Cable: LONPACE

COMPUTATION CENTERS

Brussels Computation Center: Centre International, 22nd Floor, Place Rogier, Brussels 1, Belgium, Tel: Brussels 18-40-04
Telex: 2.21-106, Cable: PACEBELG Brussels

United Kingdom Computation Center: Electronic Associates, Ltd., Burgess Hill, Sussex, England, Telephone: Burgess Hill (Sussex) 5101-5, Telex: 87183, Cable: LONPACE



GENERAL OFFICES ■ West Long Branch, New Jersey, U.S.A.

ADVANCED SYSTEMS ANALYSIS AND COMPUTATION SERVICES/ANALOG COMPUTERS/DIGITAL COMPUTERS/HYBRID ANALOG-DIGITAL COMPUTATION EQUIPMENT/ANALOG AND DIGITAL PLOTTERS/SIMULATION SYSTEMS/SCIENTIFIC AND LABORATORY INSTRUMENTS/INDUSTRIAL PROCESS CONTROL SYSTEMS / PHOTOGRAMMETRIC EQUIPMENT/ RANGE INSTRUMENTATION SYSTEMS/TEST AND CHECK-OUT SYSTEMS/MILITARY AND INDUSTRIAL RESEARCH AND DEVELOPMENT SERVICES/FIELD ENGINEERING AND EQUIPMENT MAINTENANCE SERVICES.



Functionally organized patch panel . . .

One of the major features of the 231R-V, EAI's latest generation of computing systems, is the new pre-patch panel of the Program Patching System. Expressing all of the advancements of modern computational needs, the panel emphasizes the trend toward greater high-speed equipment utilization. It exhibits the many new patching terminals that integrate the analog program to EAI's Series 350 Digital Operations System for hybrid computation.

The layout of the panel corresponds to terminations of standard component expansion modules, whose critical components are physically located directly behind the patch bay in the temperature-stabilized network oven. Programming is facilitated by the logical color-coding and labeling of standard component terminal areas which are distributed into fifteen major patching subdivisions. Non-standard configurations are easily adapted with high quality metal overlay decals.

Lightweight precision construction . . .

Solid, one-piece aluminum construction with chrome-plated handles presents an easy-to-handle patch panel. The panel contains 3,450 holes drilled to a $\pm .001$ " tolerance, which are arranged for maximum employment of patching plugs and cords while minimizing patch panel clutter. Locating blocks on the rear of the panel serve as guides for its simple insertion into the patch bay.

Maximum contact panel latching system . . .

When inserting the panel, a latching system provides a positive-contact wiping action between all patch cords and bottle plugs in the panel and the permanently mounted contact springs of the patch bay. Lever-operated cams lift the panel upwards, increasing the patch cord pressure against the spring contact . . . performing a wiping action between contacts before latching the panel in place. Such action not only assures positive contact, but keeps all conducting surfaces clean and free of pitting. All spring contacts, mounted on special low-loss insulator bushings, patch cords and patching plug tips are gold-plated for maximum conductivity and long life. As a safety feature, the latching system includes provisions for auto-

PROGRAM PATCHING

The Program Patching System of Analog Computing System has been complete operating flexibility . . . offering convenience and time saving to the c

matically disconnecting every contact voltage when the pre-patch panel is removed.

Considerations for ultimate performance . . .

With inputs and outputs of all computing components terminating at the patch-bay, its electrical design is necessarily critical to computer performance. In the 231R-V Program Patching System, special care has been taken to prevent crosstalk and to avoid accuracy degradation. A metal gridwork on the front and rear of the patch bay forms individually shielded cells for each contact. Such a cellular construction offers complete electrical shielding for each signal . . . minimizing noise and allowing maximum dynamic operation of equipment. To keep conducting paths between the pre-patch panel and amplifier networks at a minimum, the patch-bay also forms the front cover of the temperature-stabilized network oven. All connections to the rear of the patch-bay are made either by taper pins or banana plugs to facilitate any maintenance to be performed in this area.

Color coded for programming convenience . . .

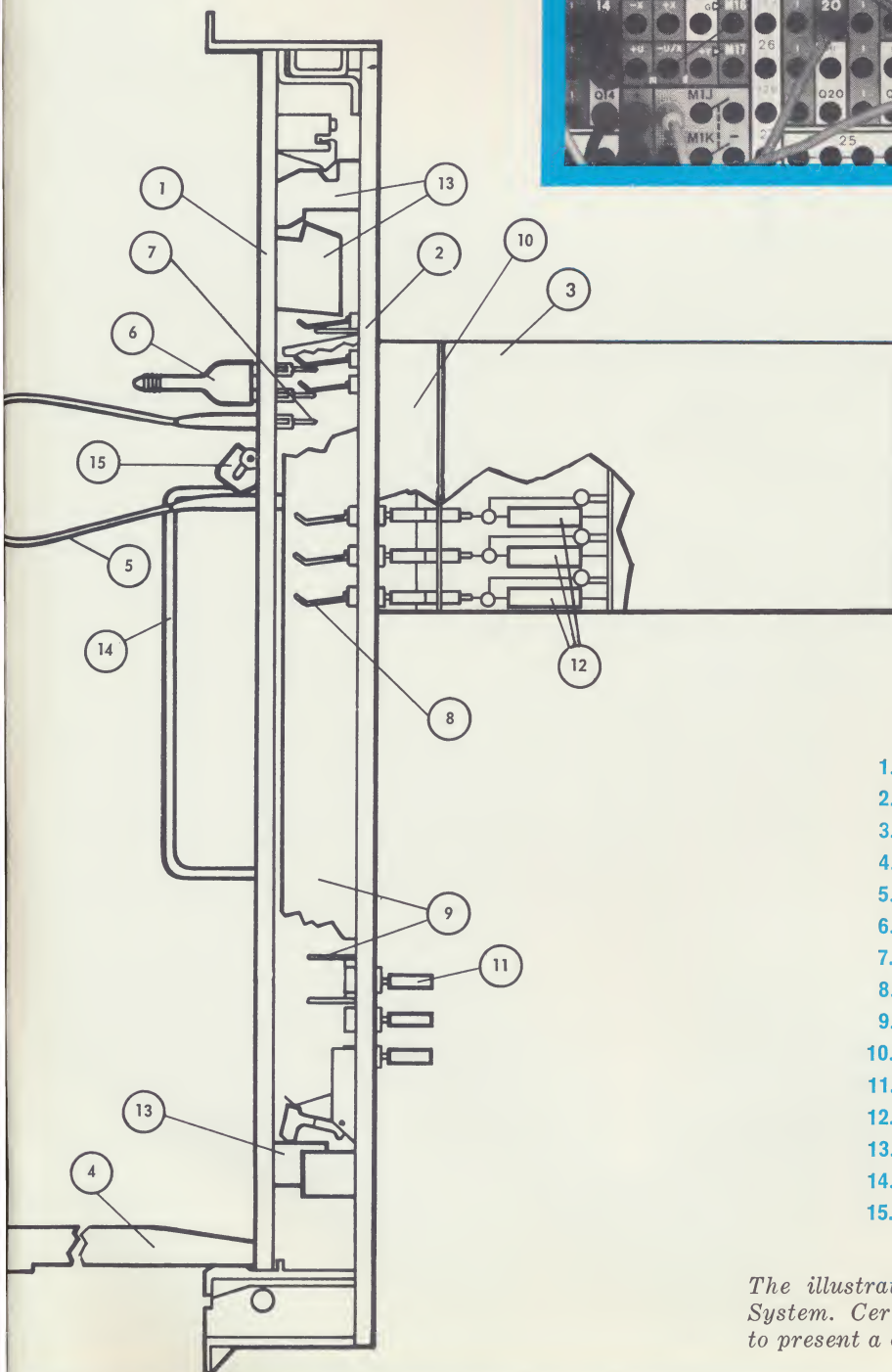
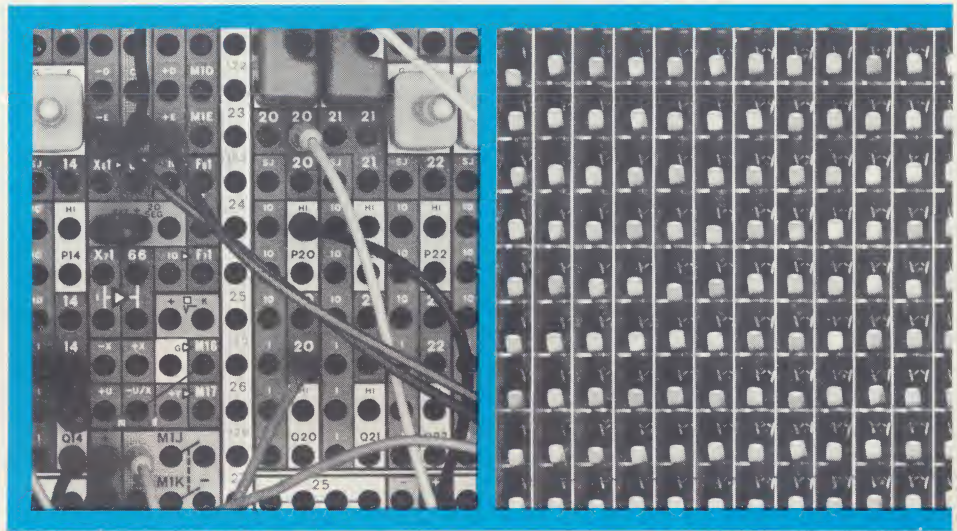
Complete programming flexibility is offered by the Program Patching System. Multiple input and output terminations, in conjunction with fully-shielded bottle-plugs, enables the necessary connections to be made with a minimum number of patching operations. To further aid programming, a consistent panel color-coding scheme is used:

- Component input terminals are green.
- Component output and positive reference terminals are red.
- Attenuator and passive element areas are yellow.
- Ground or zero reference terminals are black.
- Negative reference areas are orange.
- Control functions and voltages are colored tan.
- Tiepoints and trunk terminals are white.

The patch panel may be removed for easy program storage or for patching alterations, or may be re-patched while still on the computer. Component locating convenience is aided by border labeling, while blank "write-in" areas are provided on each lower corner of the panel for program identification.

NG SYSTEM

the Series 231R-V
engineered for com-
g maximum patching
computer programmer.



CALLOUTS

1. ALUMINUM PRE-PATCH PANEL
2. PATCH BAY
3. COMPUTING NETWORK
4. PATCH PANEL LATCHING LEVER
5. PATCH CORD
6. BOTTLE PLUG
7. GOLD-PLATED TIP
8. GOLD-PLATED CONTACT SPRING
9. METAL GRID-WORK
10. NETWORK SHIELD
11. BANANA PIN RECEPTACLE
12. PRECISION COMPONENTS
13. PATCH PANEL LOCATING BLOCKS
14. CHROME HANDLE
15. LOCKING LEVER LATCH

The illustration is a cross-section of the Patching System. Certain elements have been purposely deleted to present a clear picture of the essential construction.